38th INTERNATIONAL CONFERENCE
ON HIGH ENERGY PHYSICS
AUGUST 3 - 10, 2016
CHICAGO

Contribution ID: **1287** Type: **Oral Presentation**

Measurement of the Collins asymmetries as a function of energy and transverse momentum for kaons and pions at BABAR (8' + 2')

Thursday 4 August 2016 18:30 (10 minutes)

Inclusive hadron production cross sections and angular distributions in
e+e- collisions shed light on fundamental questions of hadronization and fragmentation processes. We present measurements of the Collins azimuthal asymmetries in inclusive production of hadron pairs, in the e+e- -> h1 h2 X annihilation process, where the hadrons (either kaons or pions) are produced in opposite hemispheres. The data collected by the BABAR detector allow the determination of the Collins fragmentation function dependence on hadron fractional energy and transverse momentum for the up, down and, for the first time, strange quarks.
These data can be combined with semi-inclusive deep-inelastic-scattering data to extract the transversity distribution function, which is the least known leading-twist component of the QCD description of the partonic structure of the nucleon.

Primary author: VASSEUR, Georges (CEA)

Co-author: ANULLI, Fabio (Universita e INFN, Roma I (IT))

Presenter: VASSEUR, Georges (CEA)

Session Classification: Strong Interactions and Hadron Physics

Track Classification: Strong Interactions and Hadron Physics